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ABSTRACT

Alabama's Preparing Tomorrow's Teachers To Use Technology program developed an assessment instrument to measure the level of technology integration into Alabama's classrooms. The instrument asked questions related to five factors: (1) general instruction integration; (2) teaching students to use technology; (3) managing technology resources; (4) general technology skills; and (5) essential conditions (for technology use). The survey was posted on the World Wide Web, and all classroom teachers in the state were issued a login name and password to access the survey. Responses were received from 329 teachers from 10 schools in 2002. This study analyzed responses of teachers from one middle school. Responses indicate that teachers at the middle school are still at the beginning level of technology integration in the classroom, and that the school does not provide enough essential conditions for technology support. The school is still at the beginning stages of technology integration, although teachers appear to have the general technology skills to integrate technology at a higher level. (Contains 7 tables and 13 figures.) (SLD)

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How are Alabama's teachers integrating the International Society for Technology in Education (ISTE) standards in the classroom:

Measuring Technology Integration's IMPACT – Roberts Middle School

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Measuring Technology Integration's IMPACT – Roberts Middle School

Introduction

Alabama's Preparing Tomorrow's Teachers to Use Technology (AlaPT3) developed an assessment instrument to measure the level of technology integration in Alabama's classrooms. This instrument has been correlated with IMPACT, Alabama's State Technology Plan. This correlation show relationships to the IMPACT objectives as indicated in the Correlation Attachment. The Profiler Technology Integration Survey is organized into 5 categories. The survey was posted on the Profiler PT3 web server; all classroom teachers in the state were randomly selected to take the survey and were assigned a login name and password to access this survey. Three hundred and twenty-nine (n=329) people from 10 schools within the system took the survey from March to July in the year of 2002.

Background

The survey is based on the ISTE standards. It was developed through the UAB Center for Educational Accountability (CEA) over a one year time period, using a variety of focus groups from the K-12 and higher education communities. The original survey was also sent to teachers across the state to gather input to further refine the instrument. A factor analysis was performed using the Statistical Package for the Social Sciences (SPSS), version 10. The categories were fairly distributed across 5 areas:

1) general instructional integration,
2) teaching students to use technology,

3) managing technology resources,

4) general technology skills, and

5) essential conditions.

Thirty-seven questions were asked in the survey to cover the above 5 indicators. The responses to 31 questions covering the first 4 indicators have 3 choices of never, occasionally, and routinely denoting the degrees of using technology related to instructional integration, teaching students to use technology, managing technology resources, and technology skills in classroom settings. The remaining 5 questions numbered 32-37 cover the last indicator of essential conditions that have 3 choices of no, somewhat, and yes as responses to each of the remaining questions denoting the degrees of supportive conditions for technology in the school setting.

Results

Thirty-seven questions were asked regarding the classroom teachers' self perspectives about integrating technology for instruction, teaching students to use technology, managing technology resources, acquiring general technology skills, and providing essential supportive conditions in school. The 3 response choices are:

1. I have never done this or no (denoting a beginning level of technology integration).
2. I occasionally or somewhat did this (denoting an intermediate level of technology integration).
3. I routinely do this or yes (denoting an advanced level of technology integration).

See tables and figures below for detailed information of its percentages of responses on each of the five indicators.

Five Factors Analyses (n=329)

Factor 1: General Instruction Integration	Response		
Questions	Never (%)	Occasionally (%)	Routinely (%)
1. I develop and use criteria for evaluation of technology-based student products and the processes used to create those products.	53.2	36.8	10.0
2. I use various strategies to determine students' technology proficiency in content area learning.	47.4	43.5	9.1
3. I design and implement learning experiences that use assistive technologies to meet the special physical needs of students.	49.5	38.3	12.2
4. I design, implement, and assess learner-centered lessons that are based on effective practices in teaching and learning with technology.	38.9	45.3	15.8
5. I plan and implement technology-based learning activities that promote student engagement in higher-level thinking and creation of original products.	40.1	42.9	17.0
6. I design, manage, and facilitate learning experiences using technology that is sensitive to the diversity of learners.	43.5	39.5	17.0
7. I identify, evaluate, and select specific technology resources to support a coherent lesson sequence.	38.0	43.2	18.8
8. I organize learning activities so that students work together using the tools of technology.	28.9	48.9	22.2
9. I recognize students' talents in the use of technology and provide them with opportunities to share their expertise with their teachers, peers, and others.	29.8	52.6	17.6
10. I apply technology productivity tools for student assessment and reporting purposes.	42.2	39.8	17.9
Average	41.2	43.1	15.8

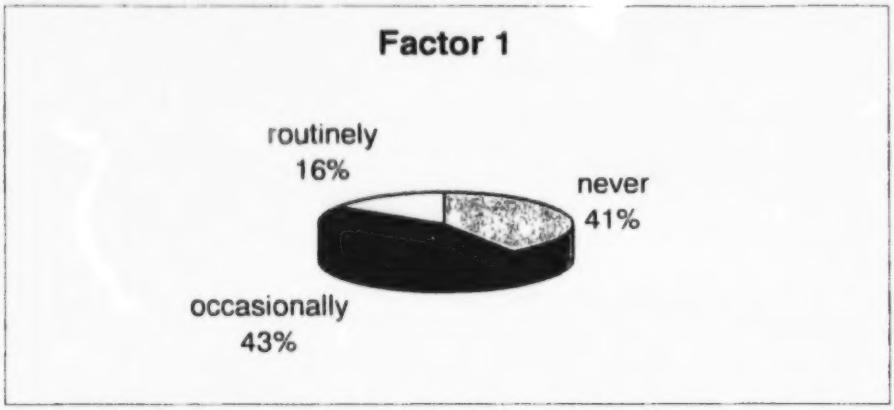

Figure 1: Average Percent of Responses under Factor 1

Factor 2: Teaching Students to Use Technology	Response		
Questions	Never (%)	Occasionally (%)	Routinely (%)
11. I teach students to use technology resources in collaborative ways to solve authentic problems in the subject area(s).	54.1	36.8	9.1
12. I teach students to troubleshoot routine hardware and software problems.	76.3	19.5	4.3
13. I teach students to select and apply suitable productivity tools (e.g., word processing, databases, spreadsheets, communication tools, graphics programs) to complete personal and educational tasks.	59.0	29.8	11.2
14. I teach students to use technology tools and resources for preparing publications and presentations, managing information, and interacting with various audiences.	62.6	27.4	10.0
15. I teach students to participate in online collaboration or discussion as part of learning experiences.	85.4	14.3	0.3
16. I teach students to use computers, printers, and other peripheral devices (e.g., scanners, digital cameras).	31.9	41.6	26.4
17. I teach students to use technology tools to process data and report results	66.9	25.8	7.3
18. I teach students to use technology to locate, evaluate, and collect information from a variety of sources.	30.4	49.8	19.8
Average	59.5	29.9	10.1

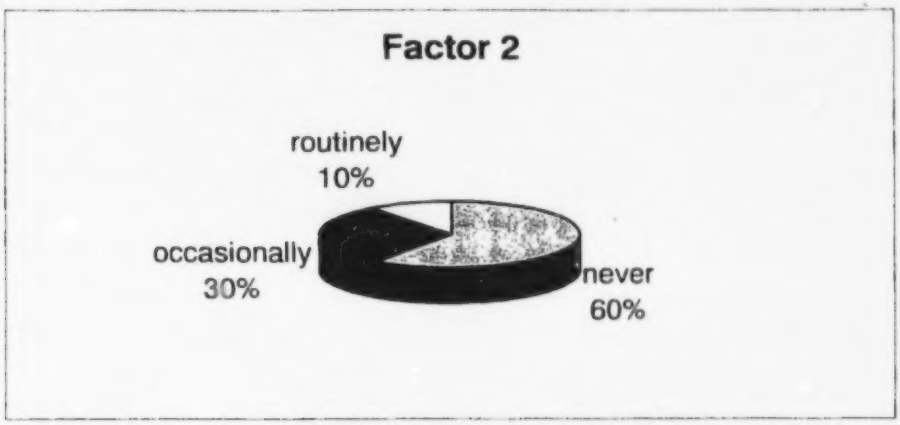

Figure 2: Average Percent of Responses under Factor 2

Factor 3: Managing Technology Resources	Response		
Question	Never (%)	Occasionally (%)	Routinely (%)
19. I identify technology resources and technical assistance available within the school and district.	35.3	35.3	29.5
20. I model safe and responsible use of technology and implement school and district technology acceptable use policies and data security plans.	13.7	12.5	73.9
21. I manage available technology resources to provide equitable access for all students.	22.8	30.4	46.8
22. I plan and implement learning activities that use technology to enhance student academic achievement and technology proficiency.	23.4	48.6	28.0
23. I evaluate and improve instructional technology practices in the classroom using information from student feedback, observations, student assessment data, etc.	44.7	35.3	20.1
24. I assess current and emerging technologies with the potential for facilitating teaching and student learning.	30.7	51.4	17.9
25. I participate in online professional collaboration (e-mail, listserv, chat rooms) with peers and experts to enhance technology expertise.	57.8	30.1	12.2
Average	31.9	36.9	31.2

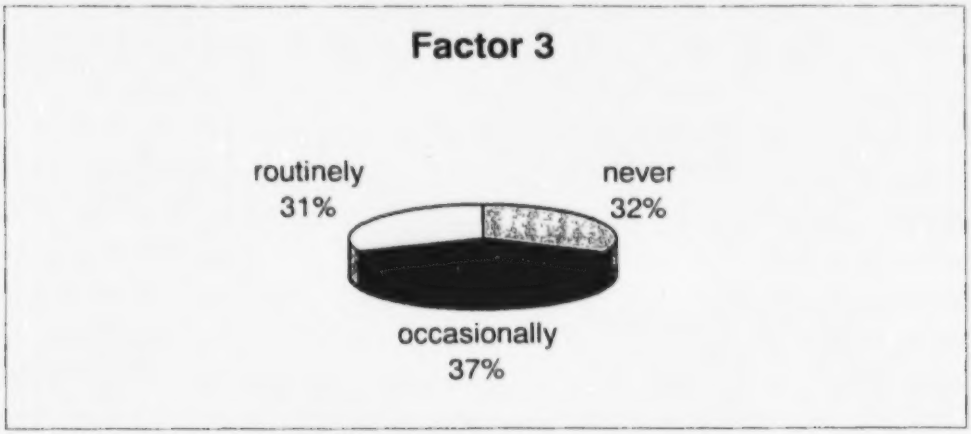

Figure 3: Average Percent of Responses under Factor 3

Factor 4 : General Technology Skills	Response		
Question	Never (%)	Occasionally (%)	Routinely (%)
26. I use computers, printers, and other peripheral devices (e.g., scanners, digital cameras).	5.2	25.8	69.0
27. I use technology to locate, evaluate and collect information from a variety of sources.	9.1	29.2	61.7
28. I use suitable productivity tools (e.g., word processing, databases, spreadsheets, communication tools, graphics programs) to complete personal, educational, and professional tasks.	12.8	23.4	63.8
29. I use technology tools and resources for preparing publications and presentations, managing information, and interacting with various audiences.	30.1	38.0	31.9
30. I troubleshoot routine hardware and software problems that occur in the classroom.	42.9	38.0	19.1
31. I use technology to facilitate communication with parents/guardians of students.	39.8	43.6	18.5
Average	22.6	31.2	45.6

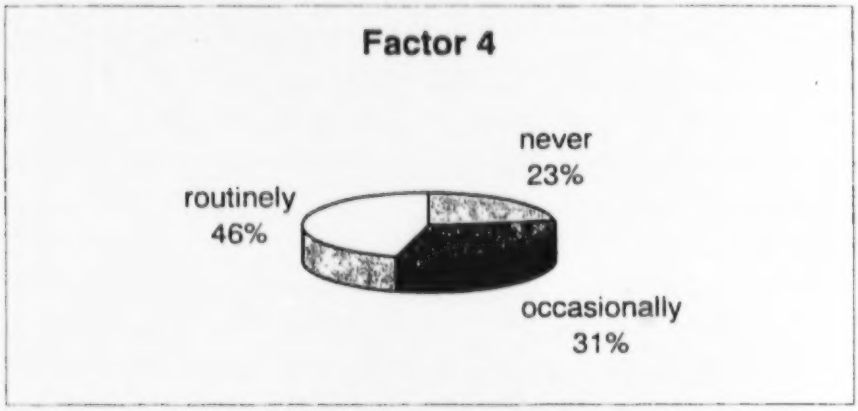

Figure 4: Average Percent of Responses under Factor 4

Factor 5: Essential Conditions	Response		
Question	No (%)	Somewhat (%)	Yes (%)
32. I have sufficient hardware to successfully integrate technology in my teaching.	30.1	54.1	15.8
33. I have sufficient software to successfully integrate technology in my teaching.	35.3	49.5	15.2
34. I have sufficient technology support to successfully integrate technology in my teaching.	24.0	56.8	19.1
35. I have sufficient instructional support to successfully integrate technology in my teaching.	22.2	56.8	21.0
36. My principal supports the integration of technology in teaching and learning	7.3	19.1	73.6
37. I have sufficient professional development to allow me to successfully integrate technology in the classroom.	16.7	55.0	28.3
Average	22.6	48.6	28.9

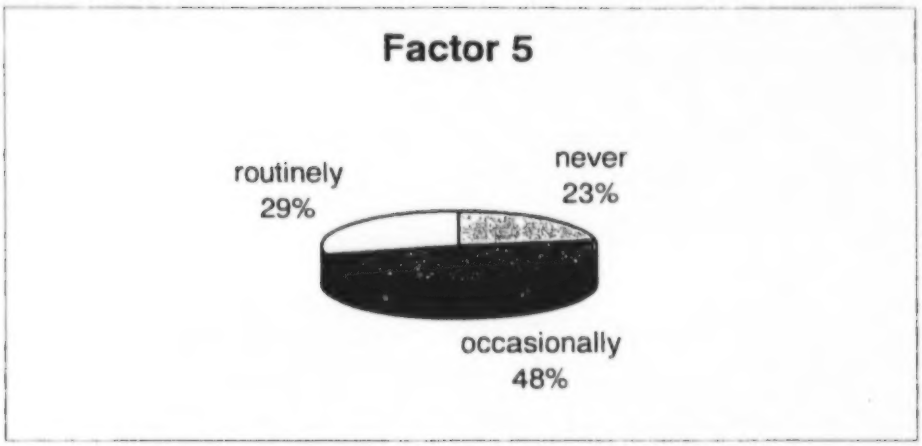

Figure 5: Average Percent of Responses under Factor 5

Summary

Within the 5 factors, the highest percent of "Never" as a response (59.5%) is factor 2 that is "teaching students to use technology". It signifies that teachers in Roberts Middle School are still at the beginning level of technology integration in classroom. The highest percent of "Occasionally" as a response (48.6%) is factor 5 that is "essential conditions". It indicates that Roberts Middle School does not provide enough essential conditions for technology support; the system is still at the beginning level of technology integration into their curriculum instruction. The highest percent of "Routinely" as a response (45.6%) is factor 4 that is "general technology skills". It shows that teachers in Roberts Middle School have the general technology skills and are at the advanced level of technology integration in their classroom. See table and figures below for detailed information.

Comparison of Responses among 5 factors

Factor	Response		
	Never (%)	Occasionally (%)	Routinely (%)
Factor 1	41.2	43.1	15.8
Factor 2	59.5	29.9	10.1
Factor 3	31.9	36.9	31.2
Factor 4	22.6	31.2	45.6
Factor 5	22.6	48.6	28.9

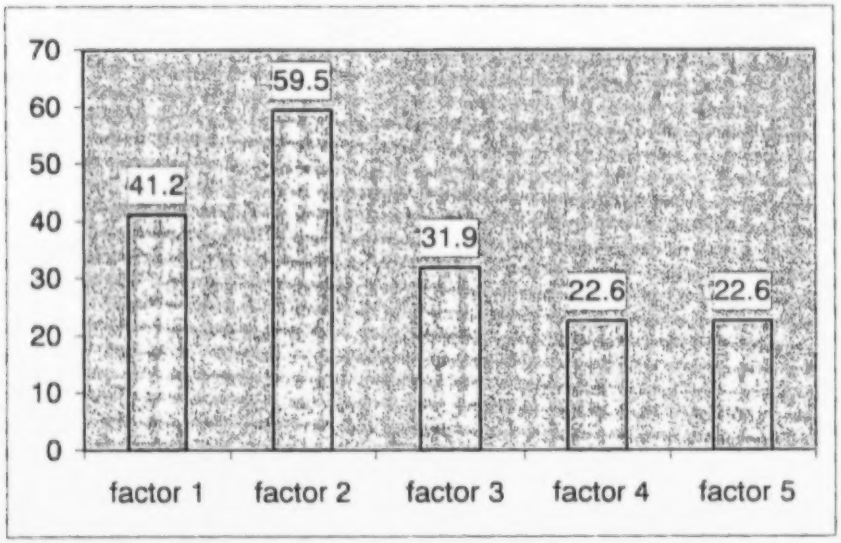

Figure 6: The Highest Percent of Response as "Never" to Each Factor

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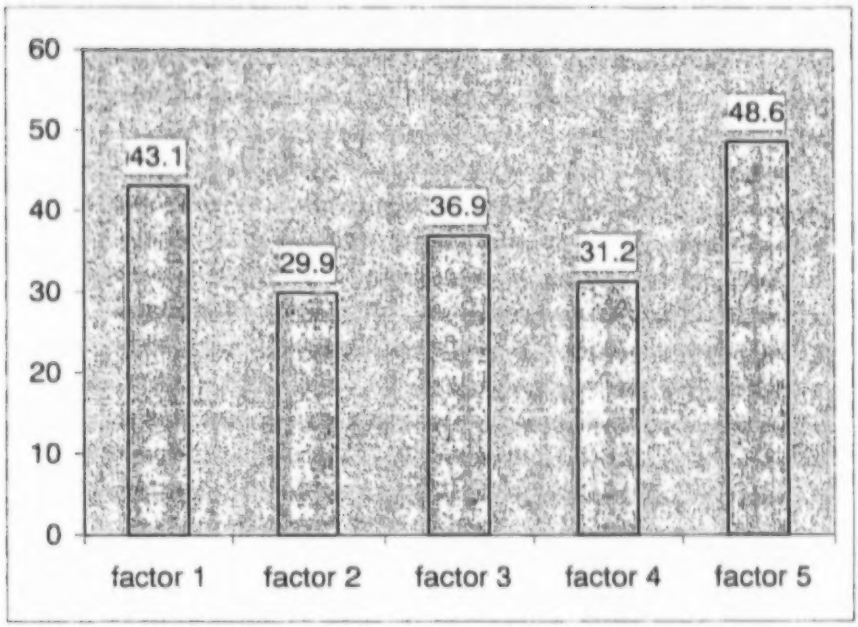

Figure 7: The Highest Percent of Response as "Occasionally" to Each Factor

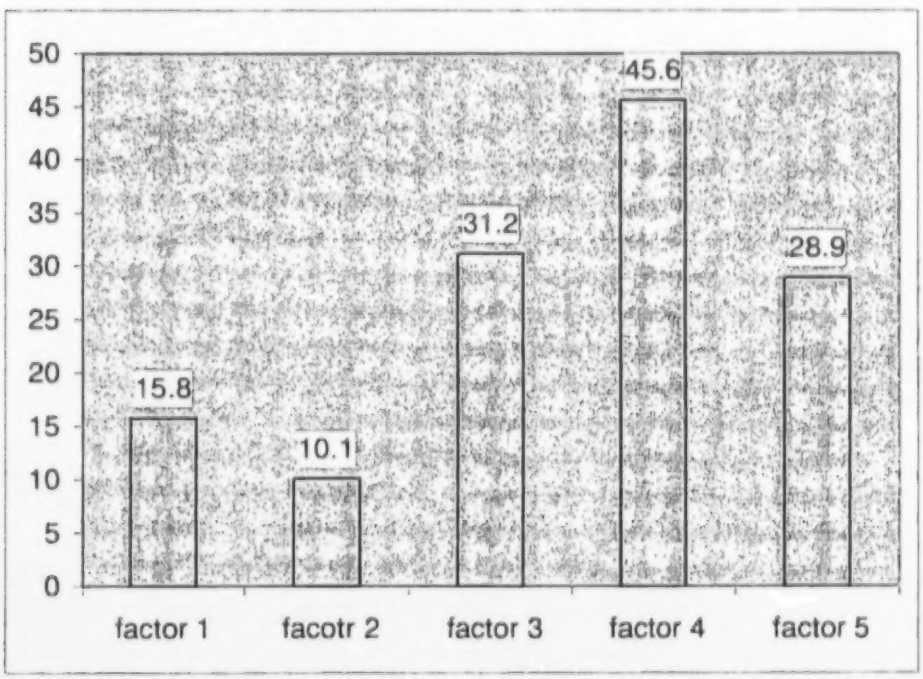

Figure 8: The Highest Percent of Response as "Routinely" to Each Factor

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State vs. Roberts Middle School

Within the 5 factors comparison between Alabama state data and Roberts Middle School, both of them fit in factor 2 as the highest percent of "Never" as a response (47.9% vs. 59.5%), that is "teaching students to use technology". It signifies that teachers both in Roberts Middle School and Alabama state data are still at the beginning level of technology integration in classroom. The highest percent of "Occasionally" as a response (48.6%) in Roberts Middle School is factor 5 that is "essential conditions". It indicates that Roberts Middle School does not provide enough essential conditions for technology support; the school is still at the beginning level of technology integration into their curriculum instruction. However, the state data fits in factor 1 (47.2%), that is "general instruction integration" at this category. Both the state data and Roberts Middle School are at the same factor 4 as the highest percent of "Routinely" as a response (49.6% vs. 45.6%), that is "general technology skills". It shows that teachers in Roberts Middle School and state have the general technology skills and are at the advanced level of technology integration in their classroom. See table and graphs below for detailed information.

	State			Roberts		
	Never (%)	Occasionally (%)	Routinely (%)	Never (%)	Occasionally (%)	Routinely (%)
Factor 1	26.5	47.2	25.9	41.2	43.1	15.8
Factor 2	47.9	35.8	16.2	59.5	29.9	10.1
Factor 3	23.2	38.6	38.3	31.9	36.9	31.2
Factor 4	18.7	31.7	49.6	22.6	31.2	45.6
Factor 5	18.9	46.8	34.2	22.6	48.6	28.9

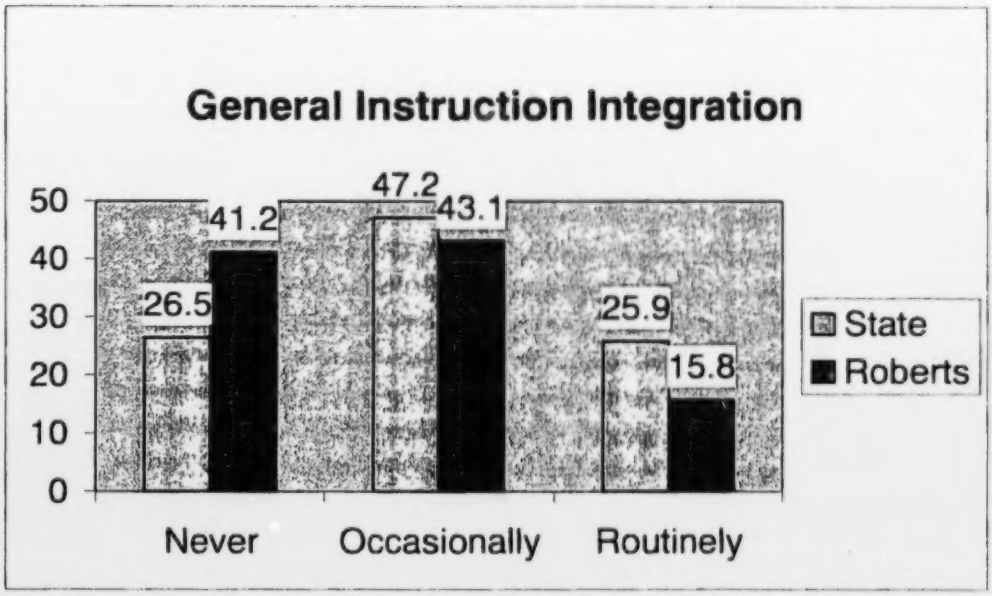

Figure 9: Comparison between Roberts Middle School and State for Factor 1

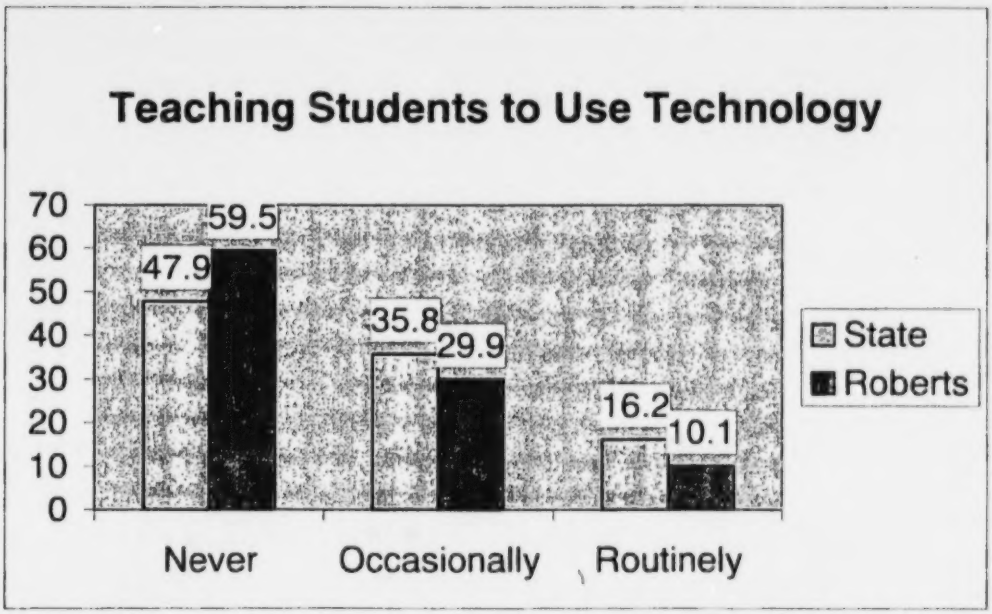

Figure 10: Comparison between Roberts Middle School and State for Factor 2

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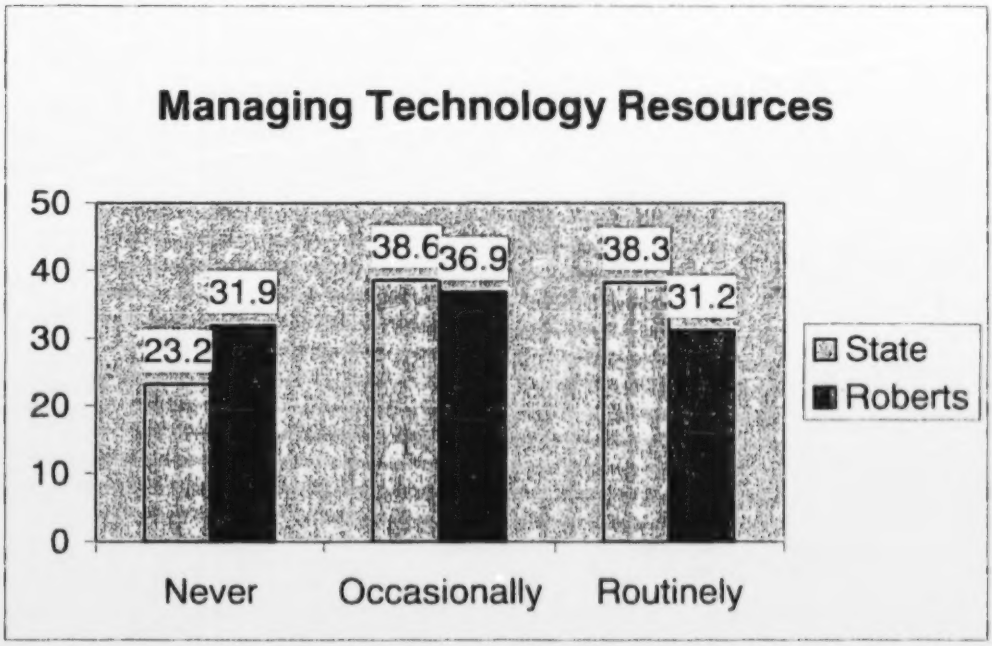

Figure 11: Comparison between Roberts Middle School and State for Factor 3

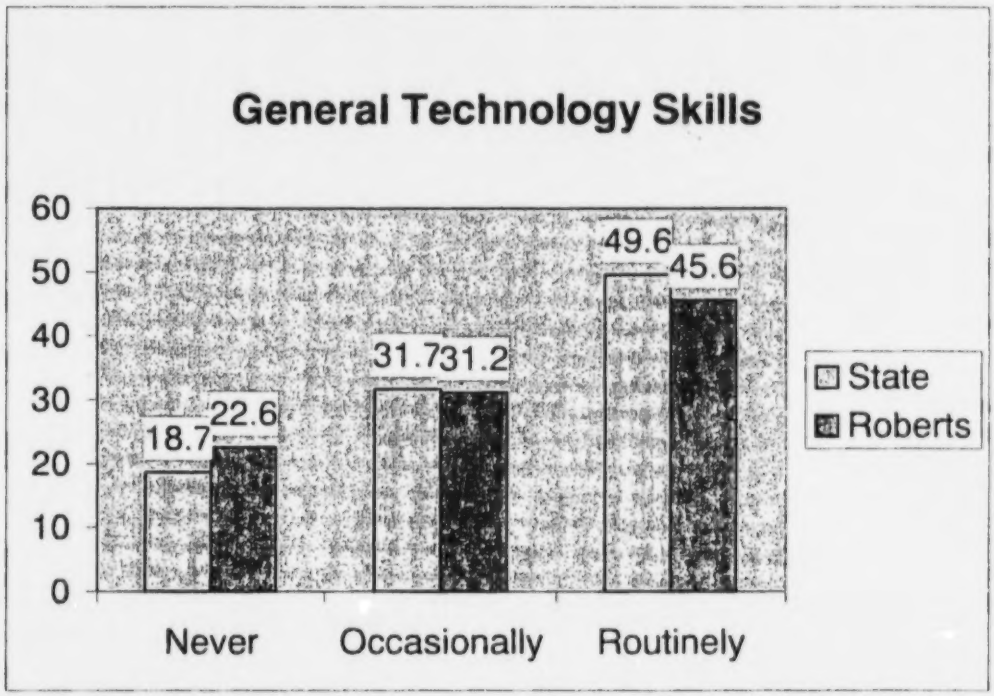

Figure 12: Comparison between Roberts Middle School and State for Factor 4

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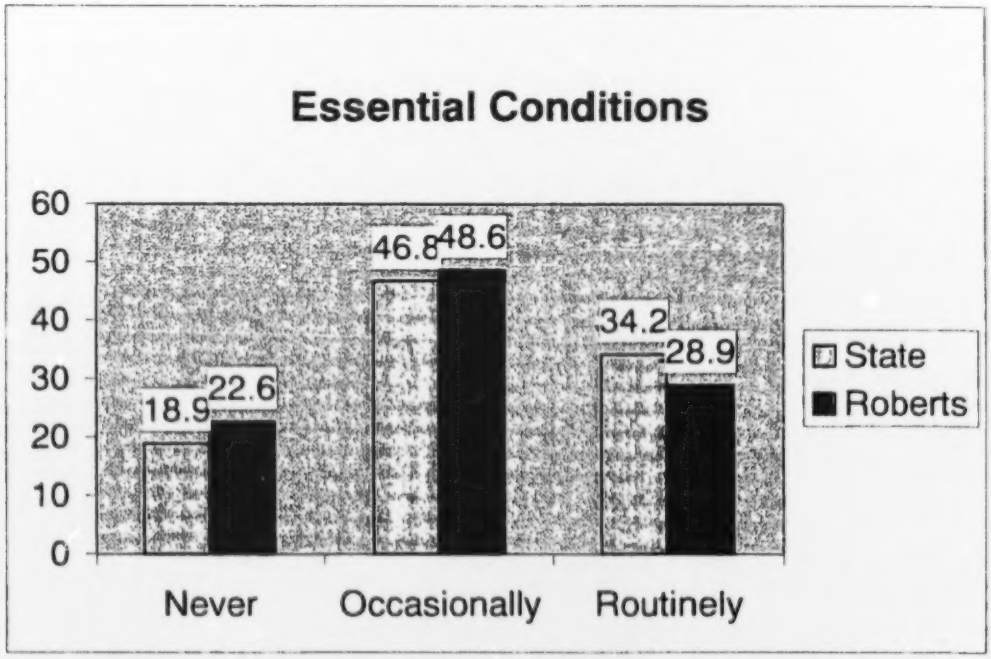

Figure 13: Comparison between Roberts Middle School and State for Factor 5

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